

(12) **UK Patent Application** (19) **GB** (11) **2 251 105** (13) **A**
 (43) Date of A publication 24.06.1992

(21) Application No 9026871.5

(22) Date of filing 11.12.1990

(71) Applicant

Race Electronics Limited

(Incorporated in the United Kingdom)

**Race House, Lanelay Road, Talbot Green, Pontyclun,
 Mid Glamorgan, CF7 8YY, United Kingdom**

(72) Inventor

David Roderick Lloyd

(74) Agent and/or Address for Service

Edward Evans & Co

**Chancery House, 53-64 Chancery Lane, London,
 WC2A 1SD, United Kingdom**

(51) INT CL⁵

G06K 19/00

(52) UK CL (Edition K)

G4H HJ

U1S S2087

(56) Documents cited

GB 2217072 A

GB 1306757 A

GB 1012725 A

EP 0159956 A2

(58) Field of search

UK CL (Edition K) G4H HJ

INT CL⁵ G06K

(54) **An identification component**

(57) A printed circuit board (PCB) 13 can be identified by identification means mounted on a body 11, 12 which is itself soldered on the PCB. The means is preferably machine readable, e.g. bar-code and/or resistance.

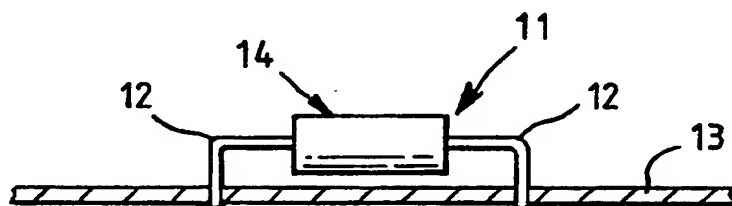


FIG. 1

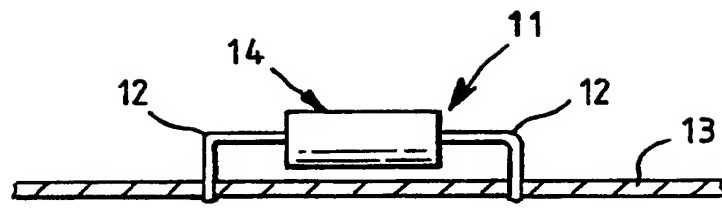


FIG. 1

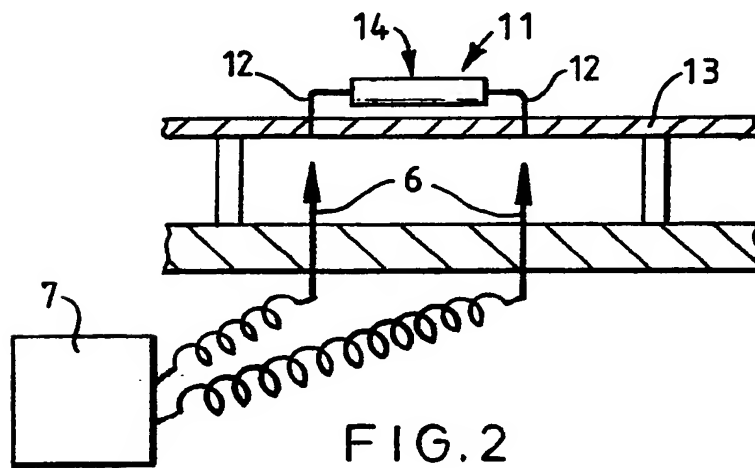


FIG. 2

AN IDENTIFICATION COMPONENT

This invention relates to an identification component for identifying printed circuit boards (PCBs).

Systems for identifying and counting products for stock control, product tracing and other purposes in industry and retailing make widespread use of machine readable codes such as bar codes which are affixed to the product and provide pictorial representation of product-related information such as part number, type number, issue number or other similar numerical title, which representation can be electronically scanned and interpreted. Such systems are employed in the electronics industry and used to identify and trace PCBs during the manufacturing process.

It is usual to print the bar code on a strip of adhesive tape which is in turn applied to the PCB on a convenient area of the board. The disadvantages of tape and similar materials in the manufacturing of PCBs are considerable. The number of personnel required to apply the taped or label bar codes is high and the speed of application is low. It is also common for the tape or label to suffer deterioration in quality or to become separated from the PCB during the manufacturing process, particularly during the cleaning process.

Accordingly this invention provides an identification component suitable for mounting on a PCB comprising a body containing a portion by which it can be soldered to the PCB and containing means by which the PCB on which it is mounted can be identified.

The means may be machine readable.

The means may comprise a bar code on the body of the component.

The bar code may be printed onto the body of the component.

The bar code may be etched (e.g. lazer etched) onto the body of the component.

The means may alternatively or in addition comprise an electrical
5 property which may be an electrical impedance .

The component may be a conventional non surface mount component.

The component may be a surface mount component.

There is also provided a method of identifying a PCB comprising
mounting thereon a component as described above.

10 Specific embodiments of the invention will now be discussed with
reference to the accompanying drawings in which:

Fig. 1 shows an identification member mount on a PCB; and

Fig. 2 shows the member of Figure 1 with an electrical
sensing circuit.

15 Figure 1 shows an identification component having a main body 11
and wire mounting members 12. Each member 12 is soldered to a
printed circuit board 13.

The body 11 bears a bar code 14 which is lazer etched thereon
before the body is mounted on the board.

20 The body 11 may be non-conducting, in which case the identification
is performed entirely by the bar code 14, which is sensed by a
conventional bar code reader. Alternatively the body 11 may be an
electrical component, such as a resistor, in which case the
mounting members function as connecting members, and an electrical
25 sensing circuit 7 has test pins 6 which can be applied to the

points on the PCB at which the members 12 are soldered, as shown in Figure 2. In this case the identification would be performed by either or both of reading the bar code 14 and sensing the electrical property of the body 11.

5 The bar codes on the bodies 11 of successive components for mounting on successive PCBs may be sequential, so that they represent serial numbers of the boards. Alternatively they may represent the model number of the board, or the date of assembly, as desired.

10 When the PCB has its various electrical components mounted thereon by an automatic insertion and soldering device, the identification component can be loaded by the same device. Since it is mounted in the same way as the electrical components, it will withstand the various process applied to the PCB. Lazer etching of the bar code
15 14 on the body 11 will ensure the code remains legible after the PCB has been processed. The identification components can be mounted on the same type of supply reel in the automatic insertion device as it used for the electrical components of the circuit of the PCB.

CLAIMS

1. An identification component suitable for mounting on a PCB comprising a body containing a portion by which it can be soldered to the printed circuit board and containing means by which the
5 printed circuit board on which it is mounted can be identified.
2. A component according to Claim 1, the means being machine readable.
3. A component according to Claim 2, the means comprising a bar code on the body of the component.
- 10 4. A component according to Claim 3, the bar code being printed on the said body of the component.
5. A component according to claim 3, the bar code being etched on the body of the component.
6. A component according to any one of claims 1 to 5, the menas
15 comprising an electrical property.
7. A component according to claim 6, the electrical property comprising an electrical impedance value.
8. A component as claimed in any one of claims 1 to 7, wherein the portion comprises a pair of connector members by which the
20 remainder of the body can be mounted off the PCB.
9. A component as claimed in any one of claims 1 to 7, wherein the portion is identical to that of a conventional surface mounted electrical component.

- 5 -

10. An identification component substantially as herein described with reference to the accompanying drawings.

11. A method of identifying a PCB comprising mounting thereon an identification component as claimed in any one of claims 1 to 10.

5 12. A PCB identified by the method of claim 11.

Amendments to the claims have been filed as follows

CLAIMS

1. An identification component suitable for mounting on a PCB comprising body containing a portion by which it can be soldered to the PCB and containing means by which the PCB on which it is mounted can be identified.
2. A component as claimed in claim 1 wherein the means is machine readable.
3. A component as claimed in claim 2 wherein the means comprises a bar code on the body of the component.
4. A component as claimed in claim 3 wherein the bar code is printed onto the body of the component.
5. A component as claimed in claim 3 wherein the bar code is etched onto the body of the component.
6. A component as claimed in any one of claims 1 to 5 wherein the means comprises an electrical property.
7. A component as claimed in claim 6 wherein the electrical property is impedance.
8. A component as claimed in any one of claims 1 to 7 wherein the means is non-surface mounted.
9. An identification component suitable for mounting on a PCB substantially as herein described with reference to the accompanying drawing.
10. A method of identifying a PCB comprising mounting thereon a component as claimed in any one of the preceding claims.

7

Patents Act 1977
Examiner's report to the Comptroller under
Section 17 (The Search Report)

Application number
 9026871.5

Relevant Technical fields

(i) UK CI (Edition K) G4H (HJ)

(ii) Int CI (Edition 5) G06K

Search Examiner

M J DAVIS

Databases (see over)

(i) UK Patent Office

(ii)

Date of Search

16.01.92

Documents considered relevant following a search in respect of claims 1-12 (ORIGINAL CLAIMS)

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	GB 2217072 A (KODAK) - abstract	1, 2, 6, 7
X	GB 1306757 (PHILIPS) - whole document	1, 2, 6, 7, 9
X	GB 1012725 (PHILCO) - eg figures 2, 2A, page 3 line 107 to page 4 line 2, page 4 lines 124-129	1, 2, 6, 7
X	EP 0159956 A2 (CARRIER) - eg figures 2, 3, page 6 line 11 to page 7 line 15	1, 2, 6-9

SF2(p)

1ms - c:\wp51\doc99\fil000217



Category	Identity of document and relevant passages	Relevant to claim(s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

&: Member of the same patent family, corresponding document.

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).